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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,942	10/21/2003	Glenn Edward Jones	2002B159/ 2	4029

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EXAMINER	
SANDERS, KRIELLION ANTIONETTE	

ART UNIT	PAPER NUMBER
1714	

DATE MAILED: 10/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/689,942	JONES ET AL.	
	Examiner	Art Unit	
	Kriellion A. Sanders	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-26 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

(12)

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2/04, 6/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 2, 10-16 and 18-26 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Costemalle et al, US Patent No. 5631316.

Costemalle et al discloses that butyl rubber compositions, (i.e., elastomeric copolymers of isobutylene with up to about 10 wt % of isoprene), possesse excellent resistance to air permeability that render them suitable for use as tire inner tubes or innerliner materials. The innerliner is composed of a relatively thin sheet of the elastomer formulated with compounding additives and a curing system, which is laminated to the inner surface of a tire carcass layer of an uncured tire as the tire is formed on a tire building drum. Final cure of the composite structure produces a tire having a cured innerliner adhered to the carcass which serves as a barrier to the passage of compressed air through the tire.

These compositions comprise a mixture of:

(i) from about 40 to 80 weight percent of an elastomeric random interpolymer comprising at least about 80 wt % of a polymerized isomonoolefin containing from 4 to 7 carbon atoms and from about 0.05 up to about 20 wt % of copolymerized aromatic monomer. Most useful of such material are elastomeric copolymers of isobutylene and para-methylstyrene containing from about 0.5 to about 20 mole % para-methylstyrene wherein up to about 60 mole % of the methyl substituent groups present on the benzyl ring contain a bromine or chlorine atom, preferably a bromine atom.

ii) from about 20 to about 45 wt % of a filler,

iii) from 0 to about 25 wt % of a plasticizer oil; and

iv) at least 1 wt % of a curing system for said interpolymer. The rubber material may be formulated with a curative system such as zinc oxide and/or sulfur curing agents.
The quantity of peroxide generally ranges from about 1 to about 10% by weight, preferably from about 1.5 to 6% by weight per hundred parts by weight of curable polymer present in the composition.

Suitable filler materials include carbon black such as channel black, furnace black, thermal black, acetylene black, lamp black and the like. The filler may also include non-reinforcing materials such as silica, clay, calcium carbonate, talc, titanium dioxide and the like. The filler is normally present in the innerliner at a level of from about 20 to about 45% by weight of the total composition, more preferably from about 25 to 40% by weight.

Suitable plasticizer oils include aliphatic acid esters or hydrocarbon plasticizer oils such as paraffinic or naphthenic petroleum oils. The preferred plasticizer oil is a paraffinic petroleum

oil. Suitable hydrocarbon plasticizer oils include oils having the following general characteristics.

ii) from about 20 to about 45 wt % of a filler,

iii) from 0 to about 25 wt % of a plasticizer oil; and

iv) at least 1 wt % of a curing system for said interpolymer.

The invention also provides a method of fabricating a pneumatic tire comprising forming the composition described above into an innerliner sheet material, exposing the sheet material to a source of high energy radiation sufficient to partially cure the sheet material, contacting the partially cured innerliner with a tire carcass element containing a more highly unsaturated rubber to form a laminate structure and heating the resulting structure at a temperature of about 100.degree. C. to 250.degree. C. for a period of time sufficient to vulcanize the structure.

2. Claim 1- 26 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Wilson, III, US Patent No. 6620871.

Applicant's invention pertains to a composition comprising:

1. An elastomer comprising C4-C7 isoolefin derived units
2. A processing oil such as paraffinic, aromatic, naphthenic and polybutene processing oils
3. A material selected from:
    i. A hydrocarbon resin grafted with a graft monomer such as maleic anhydride
    ii. Oligomers having
        1. cyclopentadiene
        2. substituted cyclopentadiene

3. C5 monomers and/or C9 monomers

iii. Combinations of i. and ii.

The composition may additionally comprise a filler, such as carbon black, silicates and clays.

The composition may additionally comprise a secondary rubber.

The composition may additionally comprise a sulfur, peroxide, metal oxide, metal oxide complex, fatty acid, and/or diamine curing agent.

Claims 21-22 are directed to compositions wherein the elastomer is cured.

Claims 23-24 pertain to articles made from the above compositions such as components for tires.

Claims 25-26 relate to a method for producing an elastomeric air barrier.

Wilson, III discloses moldable elastomeric compositions containing a synthetic or natural rubber, conventional curing agents.

The elastomeric composition of the patented invention may be selected from the group consisting of natural rubber, synthetic rubber, and mixtures thereof, wherein the synthetic rubber comprises a backbone comprising repeating olefinic unsaturation. The composition additionally contains a sulfur containing curing agent and an auxiliary composition comprising petroleum wax.

The patented composition further includes a carrier that comprises silica, wherein the carrier comprises carbon black or wherein the carrier comprises titanium dioxide. The patented composition may further 40 to 48 phr silica filler and/or a petroleum wax.

The patented invention further calls for a method for producing an elastomeric article, comprising mixing a moldable rubber composition comprising a rubber resin selected from the group consisting of natural rubber, synthetic rubber and mixtures thereof, wherein the synthetic

rubber comprises a backbone comprising repeating olefinic unsaturation, a sulfur containing curing agent and a metal compound.

Various properties of any composition are considered inherent to the composition. Such properties would include the green tack, brittleness temperature and air permeability. These properties are considered to be an inherent property of the Wilson, III compositions since the components of the patented invention are essentially the same as applicant's. Therefor, the properties of the composition are expected to be the same as applicant's composition.

See the entire Wilson, III document.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1- 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Costemalle et al, US Patent No. 5631316 as applied to claims 1, 2, 10-16 and 18-26 above and further in view of Theelen, US Patent No. 6372851.

Theelen discloses An acid-modified hydrocarbon resin suitable as a natural rosin alternative comprising the reaction product of:

(a) a first predominantly C.sub.5 hydrocarbon stream comprising unsaturated aliphatic monomers further comprising a combination of piperylene monomers;

(b) a second hydrocarbon stream comprising an isoolefin monomer; and

(c) an acidic stream comprising a dicarboxylic acid or anhydride;

The acid-modified resins have a mettler drop softening point from about 40.degree. C. to about 140.degree. C.

The invention relates to functionalized hydrocarbon resin compositions having similar physical properties as natural rosin. Because rosin is an acidic material, its acid functionality is utilized in many commercial applications. Rosins are often used in the manufacture of adhesives, paper sizing agents, printing inks, solders and fluxes, various surface coatings, insulating materials for the electronics industry, synthetic rubber, chewing gums, soaps and detergents. See col. 4, line 44 through col. 5, line 65.

It would have been obvious to utilize the specific modified elastomers of Theelan as those elastomers of Costemalle et al, that are generically disclosed, to produce rubber compositions for tire components, in view of the desirable higher acidity of the resins.

Claims 1- 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson, III, US Patent No.6620871 as applied to claims 1- 43 above and further in view of Teratani et al, US Patent No. 5001185.

5. Teratani et al discloses a rubber composition comprising 20-130 parts by weight of carbon black and 1-30 parts by weight of at least one resin obtained by adding amine as a curing agent for a resin modified with at least one of animal oil, vegetable oil, unsaturated oil, aromatic hydrocarbon and nitrile rubber for the provision of self curability, based on 100 parts by weight of at least one rubber selected from polyisoprene rubber (inclusive of natural rubber), polybutadiene rubber and styrene-butadiene copolymer rubber. According to the patented invention, additives usually used in rubber industry include sulfur, vulcanizing agent, vulcanization accelerator, antioxidant, silica and process oil. See col. 3, lines 19-24. Since

these components are conventional their inclusion in the Wilson, III rubber compositions, particularly the specific oils of Teratani et al, would have been obvious to the ordinary practitioner of this art.

6. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate conventional process oils, fillers and curing agents into the compositions of Wilson, III as disclosed in the patent. This is supported by Teratani et al which documents the conventionality of such variations. Further use of the resulting elastomeric compositions to make traditional rubber articles such as tires and inner tubes would have also been obvious to the ordinary practitioner in the rubber art.

7. Prior art cited of form 1449 must include a month and year of publication to be considered.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kriellion A. Sanders whose telephone number is 571-272-1122. The examiner can normally be reached on Monday through Thursday 6:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kriellion A. Sanders
Primary Examiner
Art Unit 1714

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